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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/780,630

02/19/2004

Tetsuhito Ikeda

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EXAMINER

QIN, YIXING

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/780,630	Applicant(s) IKEDA, TETSUHIITO	
	Examiner Yixing Qin	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/26/04, 5/24/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

I. Claims 1-10 rejected under 35 U.S.C. 103(a) as being unpatentable over Mambakkam (U.S. Patent No. 7,162,549)

Regarding claims 1, 7, 8, Mambakkam discloses a storage media control circuit for controlling inputs to and outputs from a plurality of types of storage media of different shapes and specifications, comprising:

detection terminals provided for respective ones of the storage media of the plurality of types for detecting state of connection of each storage medium; (CE1, CE2, column 8, lines 26-33) and

input/output terminals for inputting data to and outputting data from a storage medium whose connection has been detected by said detection terminals, (column 13, lines 1-9, the GPIO 99 provide I/O control and can be a I/O terminal. From, Fig. 3B, and column 7, line 50 – column 8, line 8, one realizes that there are 50 pins for input/output)

In regards to claim 7, Mambakkam further discloses “said slot unit being capable of having storage media of a plurality of types insertable therein and including an exclusion mechanism for limiting simultaneously inserted storage media to a single storage medium” (Fig. 3B shows that there is a limitation of only one single storage medium to be inserted at any given time.)

Mambakkam does not explicitly disclose “wherein the number of input/output terminals is equal to the number of input/output signals of whichever storage medium has the largest number of input/output signals among the storage media of the plurality of types.”

In regards to claim 8, Mambakkam does not explicitly disclose “wherein the printing apparatus is so adapted that it is possible to print image data that has been stored on the storage media”

However, Fig. 3b and column 7, line 50 – column 8, line 8 shows that various adapters can be used so that different types of cards can fit into the slot 44, which has 50 pins. One skilled in the art knows that CF 16 has 50 pins, while the other types have less pins. Thus, the largest number of input/output signals can be interpreted as 50, and the largest number of pins (the input/output terminals) is also 50. While this is not explicitly stated as a largest number, one of ordinary skill would realize that with the various adapters there is a need for only a total of 50 pins and thus one type of input,

which effectively saves the amount of space and/or hardware needed for one reader to read different types of removable storage media.

Regarding claim 8, Mambakkam discloses that their invention can be used in a printer (column 26, lines 16-27). It has been well known to use flash cards to store images and to print them, so one of ordinary skill would be able to easily and predictably improve Mambakkam's invention by putting the card reader into a printer.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have found a largest number of I/O terminals needed to satisfy reading a number of different storage mediums. Also it would have been obvious to use the flash cards to store images and to print them.

The motivation would have been to use one particular design for reading one type of removable storage medium and adapt it to be used with similar storage mediums and in different devices.

Therefore, it would have been obvious to alter or improve the Mambakkam invention to obtain the invention as specified.

Regarding claim 2, Mambakkam discloses the circuit according to claim 1, further comprising:

interface controllers provided for respective ones of the storage media of the plurality of types; (Fig. 10, item 40 – converter chip.) and

a selector for selecting an interface controller, which is to be connected to the input/output terminals, based upon signals from the detection terminals. (Column 13, lines 1-9 discloses reading from one of the connectors - i.e. - choose which type of media to read. Although there are not multiple controllers, the function is essentially the same using one controller 40 in the Mambakkam reference. Using multiple controllers would essentially be breaking the one controller 49 of Mambakkam down into different modules, and would be an obvious variation. One of ordinary skill would recognize the various advantages of using either a single or multiple controllers.)

Regarding claim 3, Mambakkam discloses the circuit according to claim 1, further comprising an interrupt generator for generating a interrupt signal upon detecting a change in the connection state of a storage medium from an and output of signals from the detection terminals. (column 24, lines 19-27 – there is a detection of the removal of a flash card)

Regarding claim 4, Mambakkam discloses the circuit according to claim 1, wherein the storage media of the plurality of types are memory cards using semiconductor storage elements. (From claim 1 above, and Fig. 3B, one can see that there are various memory cards that can be read. It is known that these cards contain semiconductor storage elements.)

Regarding claim 5, Mambakkam discloses the circuit according to claim 4, wherein the memory cards include at least one among a compact flash card, a memory stick, a smart media card, an SD card, a multimedia card and an xD picture card. (again, see Fig. 3B for the various types of cards.)

Regarding claim 6, Mambakkam discloses the circuit according to claim 1 wherein the circuit is formed as a single semiconductor device. (Fig. 3B, the “reader” on the left portion of Fig. 3B is formed as a single entity)

Regarding claim 9, Mambakkam discloses a storage media control circuit for controlling inputs to and outputs from a plurality of types of storage media of different shapes and specifications, comprising:

detection means for detecting the type of a storage medium that undergoes input/output of data; (CE1, CE2, column 8, lines 26-33)

buffers for holding input data or output data with regard to this storage medium; (Fig. 9 shows removable mass storage or disk that can hold data)

first control means, which correspond to respective ones of the plurality of storage media, for performing control for accessing the storage media; (controller 40)

It does not explicitly disclose “selection means for selecting said buffers; and
second control means for controlling selection of said first control means and
said selection means in accordance with result of detection by said detection means“

However, column 12, lines 14-26 discloses that the converter chip 40 generates signals to allow info to be copied to the mass storage and to the disk. In addition, Fig. 10 and column 13, lines 29-38 disclose that data can be buffered prior to sending it to a removable storage or other device. While this is not explicitly a selection of buffers, one of ordinary skill would recognize that it is possible to store data from the flash cards to a variety of storage devices. Also in column 12, lines 41-54, it is disclosed that a user pushes a button to activate the converter chip. This would be a second control means.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have been able to choose where to store the data.

The motivation would have been to allow the data to be stored in a variety of storages depending on where a user would need to access the data.

Therefore, it would have been obvious to alter Mambakkam to obtain the invention as specified.

Regarding claim 10, Mambakkam discloses the circuit according to claim 9, wherein said buffers are a grouping of at least one of input data buffers, output data buffers and input/output data buffers. (The storage mediums of claim 9 are disk drives, so they would be considered input/output storages.)

II. Claim 11 rejected under 35 U.S.C. 103(a) as being unpatentable over Mambakkam (U.S. Patent No. 7,162,549) In view of Yasugi (U.S. PG Pub. No. 2002/0073271)

Regarding claim 11, the Mambakkam reference discloses the buffers can be a ram/rom or even other types of storage medium such as a disk.

It does not explicitly disclose “The circuit according to claim 10, wherein the output data buffers and input/output data buffers are capable of being set to a high impedance. “

However, Yasugi discloses in P[0112] that memory devices such as SRAM or ROM can be brought to a state of high impedance to prevent data output.

Mambakkam and Yasugi are combinable because both use RAM/ROM devices for data storage. Yasugi goes into more detail regarding the usage of the RAM/ROM.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used a buffer device with a high impedance setting.

The motivation would have been to prevent input/output of data when necessary.

Therefore, it would have been obvious to combine Mamabakkam and Yasugi to obtain the invention as specified.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yixing Qin whose telephone number is (571)272-7381.

The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached on (571) 272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YQ

/Mark K Zimmerman/
Supervisory Patent Examiner, Art Unit 2625